Business performance measurement

Theory and practice

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David Otley

Introduction

Accounting measures of performance have been the traditional mainstay of quantitative approaches to organizational performance measurement. However, over the past two decades, a great deal of attention has been paid to the development and use of non-financial measures of performance, which can be used both to motivate and report on the performance of business (and other) organizations. The impetus for such developments has come from both the bottom and the top of the organization. Much performance management at the operational level is carried out using specific indicators of performance, which are usually not measured in financial terms. At the most senior levels, although financial performance is inevitably a major consideration, there has been increasing recognition that other important factors in the effective running of the organization cannot be well captured by such measures. Thus, non-financial performance measures have undergone significant development, to the relative neglect of the development of improved financial measures. However, the recent publicity surrounding the marketing of economic value added (EVA®) as an overall measure of company performance by management consultants Stern Stewart can be seen as a sign of a new emphasis on the financial aspects of performance.

The purpose of this contribution is to review the roles and functions of financial measures of organizational performance, and to outline the major features of their development, particularly in the latter half of the last century. It will be argued that there are three different major functions for financial performance measures, and that, although these functions overlap to some extent, major confusion can be caused by applying measures developed for one function to a different one. The three main functions involved are:

1 Financial measures of performance as tools of financial management. Here the focus is on the functional specialism of finance and financial management. This is concerned with the efficient provision and use of financial

resources to support the wider aims of the organization, and to manage the effective and efficient operation of the finance function.
2 Financial performance as a major objective of a business organization. Here an overarching financial performance measure, such as profit, return on investment, or EVA®, is used to signify the achievement of an important (perhaps the *most* important) organizational objective.
3 Financial measures of performance as mechanisms for motivation and control within the organization. Here the financial information provides a 'window' into the organization by which specific operations are managed through the codification of their inputs and outputs in financial terms.

Clearly, there is some overlap between these different functions. Efficient financial management is a component of efficient overall management, but it does not subsume the latter. Performance may be managed, in part, by the transmission of corporate objectives (in financial form) downwards as part of the process of strategy implementation, and financial measures may provide substantial insight into the overall impact of operational activities, but other, more specific, measures are generally needed to fully understand and manage the "drivers" of performance. This contribution will therefore first consider each of the major functions independently, and then examine the linkages between them.

What follows is by no means a comprehensive review of how functions of financial performance measures have been used over the past 50 years. Rather, it is a brief report on the highlights, which attempts to draw out the lessons that have been learned and to limit the confusion that can be caused by not recognizing the different functions involved.

A tool of financial management

Any organization, whether public or private, has to live within financial constraints and to deliver perceived value for money to its stakeholders. The role of the finance function is to manage the financial resources of the organization, and to ensure that the financial constraints it faces are not breached. Failure to do this will lead to financial distress, and ultimately, for many organizations, to financial failure or bankruptcy.

Thus, financial planning and control is an essential part of the overall management process. Establishment of precisely what the financial constraints are and how the proposed operating plans will impact upon them are a central part of the finance function. This is generally undertaken by the development

of financial plans[1] that outline the financial outcomes that are necessary for the organization to meet its commitments. Financial control can be seen as the process by which such plans are monitored and necessary corrective action proposed where significant deviations are detected.

There are three main areas of focus for financial plans. Most basically, cash flow planning is required to ensure that the cash is available to meet the financial obligations of the organization. Failure to manage cash flows will result in technical insolvency (the inability to meet payments when they are legally required to be made). For business organizations, the second area requiring attention is profitability, or the need to acquire resources (usually from revenues acquired by selling goods and services) at a greater rate than using them (usually represented by the costs of making payments to suppliers, employees, and others). Although over the life of an enterprise, total net cash flow and total profit are essentially equal, this can mask the fact that in the short-term they can be very different.[2] Indeed, one of the major causes of failure of new small business enterprises is not that they are unprofitable in the long term, but that growth in profitable activity has outstripped the cash necessary to resource it. The major difference between profit and cash flow is the time period between payments made for capital assets which will generate income in the future and the actual receipt of that income which is needed as working capital. This highlights the third area of focus, namely on assets and the provision of finance for their purchase. In accounting terms, the focus of attention is on the balance sheet, rather than the profit and loss account or the cash flow statement.

In overall terms, financial management therefore focuses on both the acquisition of financial resources on terms as favorable as possible, and on the utilization of the assets that those financial resources have been used to purchase, and on the interaction between these two activities. The single most powerful tool of reporting on these matters is the so-called "pyramid of ratios."

The apex of the pyramid of ratios (see figure 1.1) is an overall measure of profitability that divides profit by the assets used in generating that profit, namely return on capital employed. Traditionally, this is broken down into two major secondary ratios, namely the profit margin on sales and the capital turnover. Clearly, return on capital employed is equal to the product of these

[1] Such financial plans are often referred to as budgets and are widely used as a means of management control. However, this use is more concerned with management than financial control, and will be discussed in later sections.

[2] If "clean surplus" accounting is used, total net cash flow and total profit are identical, in aggregate.

two items. Each of the secondary ratios can be broken down into tertiary ratios based on the fact that profit is equal to sales revenue less cost of sales, and capital employed can be split into fixed assets (long term) and current assets (short term). However, it is evident that the concept becomes more strained the further down the pyramid one proceeds, and, although the pyramid provides a clear connection between the values of each of its component ratios, a more focused approach can be more beneficial than attempts to create a totally integrated "pyramid."

This can be provided by considering the purpose of calculating each ratio. Thus, if the concern is with cash flows and liquidity, a range of ratios based on working capital are appropriate. Thus, five key ratios are commonly calculated, i.e.

- current ratio, equal to current assets divided by current liabilities;
- quick ratio (or acid test), equal to quick assets (current assets less inventories) divided by current liabilities;
- inventory turnover period, equal to inventories divided by cost of sales, with the result being expressed in terms of days or months;
- debtors to sales ratio, with the result again being expressed as an average collection period;
- creditors to purchases ratio, again expressed as the average payment period.

Each of these ratios addresses a different aspect of the cash collection and payment cycle. There are conventional values for each of these ratios (for example, the current ratio often has a standard value of 2.0 mentioned, although this has fallen substantially in recent years because of improvements in techniques of working capital management, and the quick ratio has a value of 1.0) but in fact these values vary widely across firms and industries. More generally helpful is a comparison with industry norms and an examination of the changes in the values of these ratios over time that will assist in the assessment of whether any financial difficulties may be arising.

If the concern is more with long-term profitability than with short-term cash flows, a different set of ratios may be appropriate. Profit to sales ratios can be calculated (although different ratios can be calculated depending whether profit is measured before or after interest payments and taxation); value-added (sales revenues less the cost of bought-in supplies) ratios are also used to give insight into operational efficiencies. A general principle is that each part of the ratio should be relevant to the audience being addressed, and that the overall ratio should reflect the interests of the specific user of the information it provides.

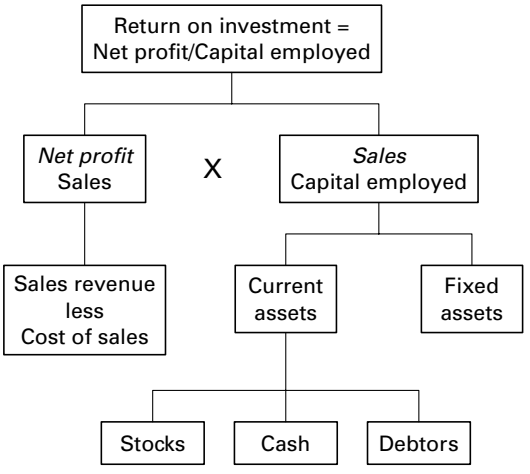

Figure 1.1. Outline pyramid of accounting ratios.

Finally, if it is desirable to consider the raising of capital, as well as its uses, a further set of ratios based on financial structure can be calculated. For example, the ratio of debt to equity capital (gearing or leverage) is an indication of the risk associated with a company's equity earnings (because debt interest is deducted from profit before profit distributable to shareholders is obtained). It is often stated that fixed assets should be funded from capital raised on a long-term basis, whilst working capital should fund only short-term needs. Again, this may seem to be a logical and prudent rule of thumb, but it is necessary to be aware that some very successful companies flout this rule to a very considerable extent. For example, most supermarket chains fund their stores (fixed assets) out of working capital because they sell their inventories for cash several times before they have to pay for them (i.e., typical inventory turnover is three weeks, whereas it is not uncommon for credit to be granted for three months by their suppliers). Thus, the values of these ratios indicate the potential riskiness of such an arrangement, but this does not necessarily preclude such a financial strategy being adopted.

It is of note that the overall return on investment ratio can be calculated in a variety of different ways. For example, return (profit) may be before or after payment of debt interest. Capital employed may be measured as total capital employed in the business, or just as the equity (shareholders') capital alone. Which measure is appropriate depends upon the use to which the ratio is being put. If the focus of interest is in the efficient use of financial resources by the firm as an entity, then profit before interest and taxation (PBIT) may

be appropriately divided by total capital employed. If the interest is in the use of shareholders' capital, then the return attributable to shareholders (i.e., profit after interest and taxes (PAIT)) divided by equity capital alone may be the more meaningful measure.

There is thus no definitive set of financial ratios that can be said to measure the performance of a business. Rather, a set of measures can be devised to assess different aspects of financial performance from different perspectives. Although some of these measures can be derived from annual financial reports, and can be used to assess the same aspect of financial performance across different companies, care needs to be taken to ensure that the same accounting principles have been used to produce the accounting numbers in each case. As company directors are well aware that such analyses may be performed, it is not uncommon for "window dressing" to occur so that acceptable results are reported. A considerable amount of such manipulation is possible within generally acceptable accounting principles (GAAP), although it will occasionally stray into the realm of more "creative accounting" which may fall foul of the auditors. More importantly, such ratios allow financial managers to keep track of a company's financial performance (perhaps in comparison with that of its major competitors), and to adjust the activities of the organization, both operating and financial, to keep within acceptable bounds.

From this perspective, the role of financial performance measurement is to help keep the organization on the financial "straight and narrow" track. The measures are used primarily by financial specialists, and the action taken as a result of such analysis may also be exclusively financial (e.g., raising more capital to ensure that debts can be paid on time). Nevertheless, it is also clear that evidence of financial problems may occur because of deficiencies in other areas of business operations. In this case, the ratios can provide the finance director with the information necessary to convince other managers that operating action needs to be taken in order to avoid financial distress. However, the primary role served by this type of performance measurement lies within the province of the finance function, and is concerned with the effective and efficient use of financial resources.

An overall business objective

The second major role of accounting performance measures is connected with the financial objectives of the business. In particular, measures are addressed

to meeting the needs of the external suppliers of capital, both debt and equity. It is this need that external financial reporting addresses. An organization's annual report and financial accounts are primarily produced for the shareholders, although some use may be made of them by bankers and other providers of debt capital. In some ways, these external financial reports can be seen as mirroring the internal measures and ratios discussed above, in that they cover the same three main areas of cash flow (rather obliquely), operating profit, and asset values. Also, the two differing foci of the performance of the business (financed by both debt and equity capital) and the return to its shareholders (i.e., the return on equity capital alone) are also apparent. However, by far the major attention is focused on reporting to shareholders.

The whole area of external financial reporting, in particular, and the debate surrounding corporate governance, more generally, is structured around the usefulness of audited financial statements (and other mandatory disclosures) to shareholders. At one level, this is captured by the agency theory formulation whereby owners (shareholders) seek to control managers, but are restricted in their ability to do this because they possess much less detailed information than the managers. Mandatory accounting statements represent one means of attempting to redress this balance by providing shareholders with an annual externally audited review of the financial outcomes associated with the business activities undertaken. This is very much of a "backstop" position, and active investors (e.g., institutional shareholders, for example) generally seek to obtain more frequent and prospective information than financial reports can provide. However, the acquisition of prospective information is restricted by the need to make all such information public, in order to preserve an equitable trading market in which all players have similar access to information. The whole area of "insider trading" and the legislation governing stock market operations is an example of the complexity of the rules needed to preserve such an open market. Thus, this brief review will restrict itself to information provided by annual financial accounts to the shareholders of a business, and the measures of performance that are used in this respect.

The legal constitution of shareholder-owned enterprises puts the shareholders in the position of being the residual owners of any financial benefits (profit) that the organization may create through its activities. The profit and loss account eventually arrives at a figure of profit after the deduction of all expenses including debt interest and taxes (PAIT). There may be other parties who have a legal right to certain fixed payments (e.g., supplier invoice payments, employees wages) but any excess over these expenses represents profit,

without any upper limit. This profit will generally be partly distributed in the form of a dividend to shareholders, and partly retained in the business (retained earnings) to finance future expansion. If an organization fails to make a profit, dividends may still be paid out of previously retained earnings, but ultimately this will become exhausted and the business will become bankrupt. In such a case, it is likely that the shares will be valueless, and the shareholders will lose their investment, up to the amount they invested. There is no provision for the recovery of any further losses from shareholders (i.e., their liability is limited to the amount they paid for their shares).

Thus earnings (profit) is the central performance indicator for shareholders. A very common measure of performance is EPS (earnings per share) which divides total annual earnings by the number of shares in issue. Earnings essentially represent the (cum dividend) increase in the accounting book value of the company due to its previous year's activities. However, the share price of a company depends not only on its past achieved performance, but also on expectations of its future prospects. In technical terms, the share price "impounds' such information and conceptually represents both the historical value of the assets it possesses and the expectation of future performance, discounted by an appropriate time-value of money. The results of these future expectations is illustrated in the commonly calculated price/earnings (P/E) ratio, which divides the current share price by the last reported earnings figure. A high value of this ratio indicates an expectation of a high level of growth in future earnings; a low value an expectation of stability or even decline.

Annual reported earnings thus represent only one component of the return to shareholders, and one of only secondary importance. More formally, in any period of ownership, the return to a shareholder is comprised of the dividends received plus the increase in share price (or minus the decrease in share price) that has taken place during the period, divided by the initial share price. By way of a practical example, the average growth in share price over the past five years on the UK stock market has been somewhat in excess of 15 percent per annum, whereas dividends have been paid at a rate of around 3–4 percent per annum. Thus, the bulk of the return to shareholders is generally in the form of capital growth rather than dividend payments, and a period's dividend payment is only loosely related to the earnings in that period. Furthermore, the computation of actual returns to shareholders require no accounting information whatsoever, being comprised of cash dividend payments and the change in the market price of the shares.

What is a reasonable rate of return that may be expected by shareholders in a particular business? This question can only be answered by reference to past

experience, and only in average terms. Essentially the computation that is being performed is an assessment of the opportunity cost of capital to the investor (i.e. what return might a shareholder expect if he had invested in alternative, but similar, investments?). The capital asset pricing model (CAPM) has been a popular method of making this assessment, and concludes that the return that can be expected depends upon (a) the risk-free rate of return that can be obtained from investing in an interest-bearing investment, such as a government bond, and (b) the riskiness of the particular investment being considered. This riskiness (represented by the coefficient beta in the model) is assessed by comparing the sensitivity of the returns from the particular investment with the returns from the market portfolio (i.e., a composite of all available investments, such as a stock market tracking fund). The relationship is assumed to be linear in form, so knowledge of a firm-specific beta and the risk-free and market portfolio expected returns allows an estimate of the cost of a company's equity capital to be made. This provides a benchmark against which future returns can be assessed. If returns in excess of this benchmark are expected, the share price is likely to rise such that new investors will obtain a return exactly in line with the benchmark figure.

However, most commonly used measures of company performance do not match this model. Earnings are the fundamental component of many performance measures. To the extent to which such earnings-based performance measures are assumed to capture information about the values of a business, these measures implicitly assume that past earnings are a good predictor of future returns and are thus associated with share price. As future values are much more dependent upon expectations of future performance, it is not necessarily the case that an historical measure of past performance is likely to be strongly associated with share price. Moreover, the current share price of a company already impounds all the publicly available information (and possibly a deal of private information, as well) about its future prospects. The market has therefore already taken into account all such information in setting the current share price. In a world of perfect information, the past history of company performance is irrelevant to predicting future share price movements.

Accounting measures of performance are largely restricted to providing confirmatory evidence that the beliefs of investors concerning current earnings are based on auditable "fact." But it must also be recognized that the calculation of accounting earnings is a matter of judgment as well as fact. For example, a charge representing the depreciation in value of capital assets forms a major cost item in the accounts of most companies. However, this

requires an assessment to be made of the expected future life of these assets, and their likely residual value at the end of this life. Clearly, this requires a considerable degree of judgment to be exercised, and different accountants might well form a different opinion as to the amount of profit to be reported. Less legitimately, the whole arena of "creative accounting" indicates the lengths to which accounting judgments can be stretched in the cause of reporting profit figures which are helpful to directors and others.

Thus, paradoxically, even if the delivery of returns to shareholders is seen as the overall aim and objective of a business enterprise, reported accounting earnings provide only a weak surrogate for overall shareholder returns. There is a considerable body of empirical literature that demonstrates the relatively low level of correlation between reported profitability and share price movements.[3] But, even in the absence of such evidence, it is clear on conceptual grounds that no such relationship is likely to be strong. In terms of assessing performance from an investor's perspective, accounting measures provide only background and confirmatory evidence. Even economic value added, which will be discussed in detail in the following sections, is essentially an accounting-based performance measure and, as such, cannot be expected to do more than imperfectly mirror shareholder returns.

A mechanism for motivation and control

The third major function of accounting performance measurement lies in its internal use as a means of motivating and controlling the activities of managers so that they concentrate on increasing the overall value of the business or, at least, the value attributable to the shareholders. In short, the role of managers is often presented as "increasing shareholder value." Even if this is accepted as the over-riding objective of the business, there is a complicated chain of means–end relationships that now need to be considered. That is, how can shareholder value be increased?

At the first level of analysis, controllable aspects of performance can be partly captured in accounting performance measures, both earnings and balance sheet values. Here, the accounting information is concerned not just with financial performance, but rather uses financial indicators to represent the underlying activities that are being managed. In an organization of any

[3] See Lev (1989) for a summary of evidence from the first two decades of "market-based" accounting research.

size or complexity, there is a need to be able to represent a variety of different activities in terms of a common language or unit of measurement. Accounting provides such a common language, so that the impact of very different activities can be aggregated into overall measures, such as sales revenue, costs, and profitability.

At the next level of analysis, it may be realized that measures of outcomes are an insufficient mechanism for controlling performance. What is required in addition are measures that represent the "drivers" of performance; that is, those activities that it is believed it is necessary to undertake so that desired outcomes (financial and other) are attained. At this level, accounting measures alone become inadequate, and over the past ten years alternative approaches, such as the balanced scorecard, have been developed to supplement solely accounting measures of performance.

The two sets of approaches based on these differing models are likely to be complementary, but the development of performance measurement has tended to divorce them. We shall therefore first consider the development of accounting-based performance management techniques, and then go on to review the wider approaches that have been developed more recently.

Accounting approaches to control

The basic accounting approach to motivation and control is to divide an organization into "responsibility centers." These are organizational units which are as self-contained as possible, and which are responsible for defined aspects of performance. At the highest level, these are defined as investment centers, where managers have responsibility both for investing in business assets and in using the assets entrusted to them effectively. A typical performance measure for an investment center manager would be return on capital employed, as this involves both profit and asset value components. At a lower level, profit centers are defined. Here managers are responsible for generating sales revenue and for managing the costs involved in production or service delivery. Thus profit is an appropriate performance measure. Finally, the lowest level of responsibility is the cost center, where the results of the units of activity cannot be assessed in terms of revenue earned, and managers are held responsible (in accounting terms) only for costs.[4] Clearly, in performance

[4] A further form of responsibility center, the revenue center, is sometimes used. This is where the unit generates sales revenues, but is responsible only for the marketing costs not the costs of producing the products sold. Here the net revenue figure can be used as a measure of the success of the unit.

management terms, cost centers require other (non-accounting) measures to be associated with them to capture the outputs that result from expenditure on inputs.

To operate control based primarily on accounting measures requires profit or investment centers to be established. Indeed, there has been a tendency to create "pseudo-profit centers" where revenues are somewhat artificially attributed to responsibility centers in order to gain the advantages associated with control of profit centers. These advantages are primarily those of having only to consider accounting measures of performance, expressed as an overall profit measure and its components. In particular, if a profit center is indeed generating profits, it can potentially be left alone to continue the good work, with control exercised in a relatively decentralized manner. However, to construct profit statements for an organizational unit requires revenues as well as costs to be attributed to it. This is not an issue where products are sold to an external customer and sales revenues generated, but it is more problematic where intermediate products are transferred internally within a larger organization, or in the public sector where services may be provided at no cost to the immediate user.

Here a value has to be attributed to the transferred goods and services, the so-called "transfer price." A great deal of attention has been paid in the accounting literature to the setting of transfer prices which will motivate managers to act in the interest of the overall organization whilst maximizing their own reported profit measure. This can be achieved under certain circumstances, but it is more common for transfer prices to generate more heat than light. If they are mis-set, there is considerable potential for managers to appear to be performing well in local terms, but to be acting dysfunctionally from a more global perspective. An extreme example was the case of the motor car manufacturer which set transfer prices on a full cost plus basis. That is, each component plant, and the assembly plant had transfer prices set on the basis of their full costs plus a percentage addition for profit margin. Not surprisingly, all the units reported healthy profits; the only black spot was the marketing division which reported heavy losses, as it was unable to sell the vehicles at anything like the costs which had been transferred to it. Clearly, in this case, the problem did not lie only in the marketing area, but also in high production costs in all the other areas. Inappropriate setting of transfer prices, and the tendency to attempt to create profit centers where they do not really exist, is responsible for a great deal of dysfunctional activity.

Even where the transfer pricing issue has been satisfactorily dealt with, there is a further issue of motivation that can arise. In a profit center, a manager can

be targeted to improve his/her profit target. But because the conventional calculation of profit excludes any assessment of the return required by the providers of equity capital, maximization of reported profits is not an appropriate objective. For example, it can be achieved by using excessive investment in working capital to produce a low, but positive, rate of return. Conversely, in an investment center, the use of return on investment as a performance measure can lead to under-investment. For example, a manager currently achieving a high rate of return (say 30 percent) may not wish to pursue a project yielding a lower rate of return (say 20 percent) even though such a project may be desirable to a company which can raise capital at an even lower rate (say 15 percent). Both these potentially dysfunctional motivational effects can be overcome by the use of residual income as a performance measure.

Residual income is defined as accounting profit less a charge for the equity capital used in its generation. That is,

Residual income = Accounting income *less* (capital employed × cost of capital %)[5]

This overcomes the problems described above. Any project which increases residual income over the life of an asset is desirable; any project which decreases residual income is undesirable. In principle, the potential for dysfunctional motivation is removed, and residual income is thus a better overall measure of performance than either profit or return on investment. However, rather surprisingly, over the last 30 or more years since residual income was introduced in the academic literature it has been surprisingly little used in practice. But, recently, this lack of use has radically changed, especially in the USA. During the 1990s the US management consultants Stern Stewart introduced a performance measure they named economic value added (EVA®) which is conceptually identical to residual income and have very successfully marketed it as an overall performance measure for companies, and as a device for measuring the performance of individual business units. They argued that all other performance measures in common use, including profit, return on investment, and earnings per share potentially created dysfunctional motivations for managers. To encourage managers to focus on creating shareholder value (rather than, for example, pursuing growth for its own sake, or because of the advantages growth can bring to the managers themselves) they argued

[5] Note that this can be computed either by taking accounting income after interest charges and using the equity capital employed and its cost, or alternatively by taking profit before interest and using the total capital employed and the weighted average cost of capital (WACC). The numerical result should be identical; however, the latter approach is usually more easily applied in practice because capital employed can be measured by valuing the assets involved.

that EVA® provided the one and only measure that would unambiguously provide the appropriate motivation.

To do this, they recommend that a considerable number of adjustments are made to the conventional financial accounts produced by companies. Most of these adjustments attempt to replace conventional financial reporting practices with recognition and measurement procedures which produce a more meaningful estimate of the capital committed to an enterprise by its investors. They claim to show, in a series of studies, that EVA® correlates more closely with share price than any other accounting measure. However, it still needs to be recognized that, even if this claim is substantiated, no historical measure of performance will be a perfect predictor of share price, in that much of the price of a share is determined by future expectations rather than past results.

Not only do they recommend the use of EVA® at the highest levels of the organization, they also strongly recommend that it is driven as far down the organization as possible, so that managers at every level are given the task of improving their reported EVA®. They also argue that managerial rewards should be closely matched to this performance measure. In such a way, they argue, managers will be motivated to improve shareholder value.

Although much can undoubtedly be achieved in this way, there are also some limitations to the effectiveness of this approach. First, accounting performance measures for a single period cannot accurately reflect the impact of decisions which may have repercussions over several accounting periods. For example, it has been shown that capital investment decisions which have a positive net-present value (NPV) (and which should therefore add value to the firm) do not necessarily yield positive accounting profits (or returns on investment, or EVA®) in every period of the project's life. The only way to ensure such an outcome would be to value the assets concerned at the NPV of their future expected cash flows. Although this is acceptable in economic decision-making terms, it is not feasible from the viewpoint of reporting on performance, as such estimates would be overly subjective. For example, a manager could improve on his reported performance merely by making slightly optimistic estimates of the outcome of future events. Second, even when multiple periods are considered, historical earnings only represent the true growth in value of a business if the assets it possesses are valued in terms of future expectations rather than historical attainments. That is, GAAPs would have to be cast aside and assets valued at the NPV of their expected future cash flows. At the very least, such an approach requires a great deal of subjective judgment on the part of managers, and is thus open to significant manipulation. There are therefore fundamental limitations as to what can be

achieved by using historical accounting numbers to measure and assess managerial and organizational performance.

Performance drivers

The complementary approaches that have been developed move away from a concentration on accounting measures alone, and add consideration of a wider range of factors which are believed to drive future economic performance. The most popular of these approaches in the 1990s has been the balanced scorecard approach, developed at the Harvard Business School. Although this will be discussed in some detail in this section, it should be recognized that other similar approaches exist, including the European Foundation for Quality Management scheme, which is in many ways similar to the Harvard approach. Moreover, these approaches are not new. The General Electric Company developed a set of performance measures for its departments in the 1950s which incorporated the following elements:

- short-term profitability,
- market share,
- productivity,
- product leadership,
- personnel development,
- employee attitudes,
- public responsibility,
- balance between short-range objectives and long-range goals.

However, the balanced scorecard approach has a number of features which make it a good vehicle for structuring an array of performance measures. First, it makes an explicit link between the espoused strategies of an organization and the performance measures it uses to monitor and control strategy implementation. This key feature makes it very clear that there is not necessarily a universal set of performance measures that are appropriate for all organizations in all circumstance (as seems to be assumed in many accounting approaches), but that specific measures need to be devised for specific circumstances. Second, the four major areas in which performance measures are to be devised (financial, customer, business process, and innovation and learning) closely match the main stakeholders of the organization (especially as the employees tend to be discussed in the fourth, innovation and learning, area). It would not be difficult to extend the balanced scorecard approach into a more fully developed stakeholder model. Third, there is a clear attempt to

model the main drivers of future performance, as each area requires the question "What must we do in order to satisfy the expectations of our . . .?" to be considered, and appropriate responses generated. Finally, the requirement that there are no more than four performance measures in each area, requires a focus on the "key success factors" that are believed to operate. This can help to compensate for the tendency to construct ever-increasing numbers of performance indicators. The difficulty in constructing a balanced scorecard is not in generating enough performance measures, but rather in selecting down to a very small number of centrally important measures.

In this formulation, the balanced scorecard uses measures of financial performance to ensure that the requirements of financiers are addressed. This closely matches the financial management use of accounting information, and may also incorporate some concept of an overall objective. Thus, it would seem that EVA® could quite appropriately be used as one of the financial measures in a balanced scorecard formulation. Interestingly, financial measures may appear in other areas. For example, the proportion of revenue generated by new products is cited as a learning and innovation measure. Clearly, a measure derived from financial components is being used to assess the long-run future prospects of a business unit. In a similar way, customer satisfaction might be assessed by repeat business, again measured by sales revenues. Such an approach perhaps gives greater insight into the development of appropriate accounting performance measures than the more universalistic approaches that accountants have tended to espouse.

Connections between the approaches

Although three major functions of accounting performance measures have been distinguished in the preceding sections, it is also common for any particular accounting measure to be used for more than one of these functions. For example, return on investment may be seen as the peak of the financial effectiveness pyramid of ratios, as a major business objective in its own right, and as a key performance target used to motivate and monitor operating performance.[6]

The most studied accounting technique in this regard has been the process of budgetary control. Although a budget is comprised of a whole set of accounting numbers, the "bottom line" (i.e., either total costs or operating

[6] Advocates of EVA would no doubt argue that EVA is an even better measure to use for these purposes.

profit) forms a single performance measure in its own right. Two major functions of budgets have been distinguished. First, a budget can be used as a financial plan, utilized by the finance department to ensure that the organization stays within its operating constraints. Second, it is much more widely used in most organizations as a tool of overall management control. Here budget targets are set for individual responsibility centers and their operating managers, so that operating performance can be monitored and controlled. The aggregate of all the responsibility center budgets becomes the overall operating objective of the organization, expressed in financial terms. The budgeting literature is very clear that budgets can be used for these two, and other, major purposes within an organization. It is equally clear that a single budget system cannot serve all these diverse purposes equally well, and that decisions need to be made as to which purposes should be prioritized.

The most acute conflict is often between the two functions outlined above, where the same budget estimates are used for both financial planning and management control. This often results in neither purpose being adequately served. Financial planning estimates need to be "best estimates" of likely outcomes, or even conservative estimates, given the unpleasant consequences of becoming unexpectedly illiquid. By contrast, management control is often best served by budget estimates being set as motivational targets which are "challenging, yet attainable." In practice, such targets may often fail to be achieved, yet may have served their purpose of motivating maximum managerial effort.

It is of interest to note that some of the more recent literature on budgetary control (see Bunce, Fraser, and Woodcock, 1995) indicates a widespread dissatisfaction by users of traditional budgetary control techniques, because they are seen to be failing as adequate control devices. This is partly because of the levels of uncertainty faced by organizations and the difficulties of making accurate forecasts of future events; the budget is often regarded as being out-of-date even before the budget period has begun. In such organizations, the primary role of budgeting is reverting to that of financial planning, with management control being assisted by a variety of measures of operating performance that are non-financial in nature, perhaps organized using a balanced scorecard framework. In this context, it is also of interest that Stern Stewart's views of budgeting are quite clear; it is a useful financial planning technique, but should not be used as a basis for issuing incentives and rewards.

However, the main point made in this section is still valid. That is, the use made of a particular performance measure should determine its operationalization and measurement. Different uses may require (sometimes subtle)

differences in definition, and measurement techniques need to be made robust against likely attempts at manipulation. The framework proposed by Otley (1999) provides one schema against which any system of performance measures used for management control purposes can be assessed.

Conclusions

Financial and accounting measures of performance often appear to have an objectivity, particularly to unsophisticated users, that turns out to be illusory. The components of any accounting ratio, for example, can be defined in a variety of different ways. No way is objectively correct or incorrect, but rather assessments have to be made concerning appropriateness for a specific use. Even when a ratio has been defined in a conceptually appropriate way, there remain issues of measurement. Again, the non-accountant generally has a sense of the objectivity of an accounting measurement that is unsupported in practice. Accounting measures of both cost and profit require a myriad of subjective judgments to be made. For example, the activity-based costing literature is replete with examples of the grossly different cost estimates that are produced by traditional and ABC-based cost accounting systems, which may have led to inappropriate product pricing decisions being made. More recently, the EVA literature has proposed well over 100 accounting adjustments that might be made to convert traditional financial accounting numbers, prepared under GAAP, into the most appropriate numbers to be used in the calculation of EVA, where EVA is to be used as a motivational target for operating managers.

Accounting was once defined, borrowing from a definition of art, as "an attempt to wrest coherence and meaning out of more reality than we ordinarily deal with" (Weick, 1979). Far-fetched as such a comparison may seem, this definition does provide a sense of the complexity of the task undertaken by much accounting measurement. Financial statements provide, within the confines of a few pages of numerical data, an account of the (financial) outcomes of a complex web of activities undertaken over a period of time. When used for management control purposes, the task becomes even more complex, for these accounting measures are intended to help ensure that operating managers will be continually motivated and challenged to exercise their managerial skills in the interests of the overall organization. In such a way, the accounting numbers provide a "window" into the organization which gives an (albeitly imperfect) image of the activities being undertaken and their consequences.

From such a perspective, the management control function clearly requires an amalgam of both financial and non-financial performance measures, and frameworks for integrating these have been proposed (e.g., the balanced scorecard, the European Foundation for Quality Management framework, and so on). However, accounting performance measurements should not be treated as a universal "given", which can be applied in a formulaic manner to any specific situation. Rather, they are like all other performance measures used for a particular purpose. As such, considerable attention needs to be paid to both their conceptual definition and to the methods used in their construction.[7] Thus, accounting performance measures should be neither dismissed nor privileged in the attempt to construct systems of performance management that encourage managers to strive to achieve organizational objectives.

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[7] Again, the EVA literature provides an excellent case study of how a particular accounting performance measure was adapted and refined from the more basic accounting data found in annual corporate reports.